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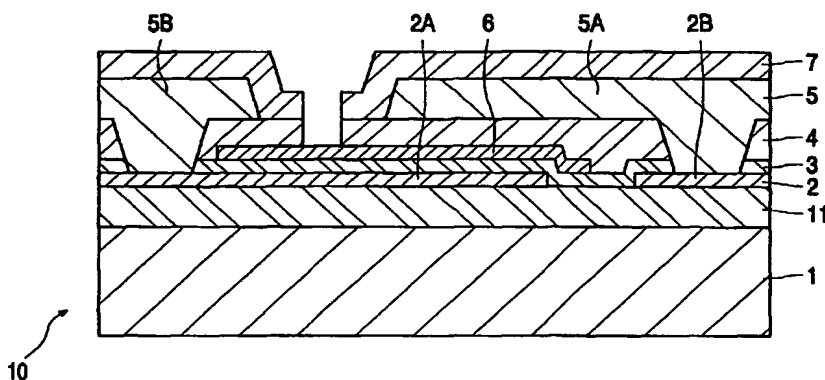
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Declaration under Rule 4.17:

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[Continued on next page]

(54) Title: METHOD FOR MANUFACTURING A MICRO-ELECTROMECHANICAL DEVICE AND MICRO-ELECTROMECHANICAL DEVICE OBTAINED THEREWITH



(57) Abstract: The invention relates to a method of manufacturing a micro-electromechanical device (10), in which are consecutively deposited on a substrate (1) a first electroconductive layer (2) in which an electrode (2A) is formed, a first electroinsulating layer (3) of a first material, a second electroinsulating layer (4) of a second material different from the first material, and a second electroconductive layer (5) in which a second electrode (5A) lying opposite the first electrode is formed which together with the first electrode (2A) and the first insulating layer (3) forms the device (10), in which after the second conductive layer (5) has been deposited, the second insulating layer (4) is removed by means of an etching agent which is selective with respect to the material of the second conductive layer (5). According to the invention for the first material and the second material materials are selected which are only limitedly selectively etchable with respect to each other and before depositing the second insulating layer (4) a further layer (6) is provided on top of the first insulating layer (3) of a further material that is selectively etchable with respect to the first material. In this way a silicon oxide and a silicon nitride may be applied for the insulating layers (3, 4) and thus the method according to the invention is very compatible with current IC processes. The second insulating layer (4) is preferably removed locally by etching, then the further layer (6) is completely removed by etching and, finally, the second insulating layer (4) is completely removed by etching.

INTERNATIONAL SEARCH REPORT

Application No

PCT/IB 03/04586

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B81C1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B81B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

INSPEC, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>BUHLER J ET AL: "Double pass metallization for CMOS aluminum actuators", 8TH INTERNATIONAL CONFERENCE ON SOLID-STATE SENSORS AND ACTUATORS AND EUROSensors IX. DIGEST OF TECHNICAL PAPERS (IEEE CAT. NO.95TH8173), PROCEEDINGS OF THE INTERNATIONAL SOLID-STATE SENSORS AND ACTUATORS CONFERENCE - TRANSDUCERS 95, 1995, STOCKHOLM, SWEDEN, PAGE(S) 360 - 363, VOL. 2 XP010305031 ISBN: 91-630-3473-5 page 360, right-hand column -page 362, left-hand column, line 16; figure 4</p> <p style="text-align: center;">--- -/-</p>	1-14

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- "O" document referring to an oral disclosure, use, exhibition or other means
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- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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Int'l Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>TILMANS H A C ET AL: "Wafer-level packaged RF-MEMS switches fabricated in a CMOS fab", INTERNATIONAL ELECTRON DEVICES MEETING 2001. IEDM. TECHNICAL DIGEST. WASHINGTON, DC, DEC. 2 - 5, 2001, NEW YORK, NY: IEEE, US, PAGE(S) 4141-4144 XP010575271 ISBN: 0-7803-7050-3 cited in the application figure 6</p>	1-14
A	<p>PAUL O ET AL: "Sacrificial aluminum etching for CMOS microstructures", PROCEEDINGS IEEE. THE TENTH ANNUAL INTERNATIONAL WORKSHOP ON MICRO ELECTRO MECHANICAL SYSTEMS (CAT. NO.97CH36021), PROCEEDINGS IEEE THE TENTH ANNUAL INTERNATIONAL WORKSHOP, 1997, NEW YORK, NY, USA, IEEE, USA, PAGE(S) 523 - 528 XP010216961 ISBN: 0-7803-3744-1 the whole document</p>	1-14
A	<p>US 5 945 898 A (JUDY JACK W ET AL) 31 August 1999 (1999-08-31) column 6, line 5 - line 30; figures 6,7</p>	1-14
A	<p>US 5 804 083 A (HIRATA SUSUMU ET AL) 8 September 1998 (1998-09-08) column 7, line 46 - line 67; figures 3A-3C</p>	1-14

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Application No
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